Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

What is claimed is:

1. (Original) An antenna system comprising:

a first core;

a first winding disposed about the first core for transmitting/receiving electromagnetic signals;

a second winding for transmitting/receiving electromagnetic signals disposed about the first core and the first winding; and

activation circuitry connected to the first winding and the second winding,

wherein the first winding and the second winding are wound such that a direction of a first magnetic field generated by the first winding is different than a direction of a second magnetic field generated by the second winding, and

wherein the activation circuitry activates the first winding separately from the second winding.

2. (Original) The system of Claim 1, wherein the first core is air.

3. (Original) The system of Claim 1, wherein the first core is a ferrite.

4. (Original) The system of Claim 1, wherein the first winding is wound as a helical solenoid around the first core.

5. (Original) The system of Claim 1, wherein the first winding is wound as a rectangular solenoid around the first core.

6. (Original) The system of Claim 1, wherein the second winding is wound as a helical solenoid around the first core.

7. (Original) The system of Claim 1, wherein the second winding is wound as a rectangular solenoid around the first core.

8. (Original) The system of Claim 1, further comprising a third winding, wherein the third winding is disposed about the first core, the first winding and the second winding, and wherein the third winding is wound such that a direction of a third magnetic field generated by the third winding is different than the direction of the first magnetic field and the second magnetic field.

9. (Original) The system of Claim 1, wherein the third winding is wound as a helical solenoid around the first core.

10. (Original) The system of Claim 1, wherein the third winding is wound as a rectangular solenoid around the first core.

11. (Original) The system of Claim 1, wherein the activation circuitry comprises a multiplexer for facilitating separate activation of the first winding and the second winding.

12. (Original) The system of Claim 8, wherein the activation circuitry comprises a multiplexer for facilitating separate activation of the third winding.

13. (Original) The system of Claim 1, wherein the first winding and the second winding transmit a radio frequency signal.

14. (Original) The system of Claim 1, wherein the first winding and the second winding receive a radio frequency signal.

15. (Original) The system of Claim 8, wherein the third winding transmits a radio frequency signal.

16. (Previously Presented) The system of Claim 8, wherein the third winding receives a radio frequency signal.

17. (Original) The system of Claim 1, wherein the direction of the first magnetic field is orthogonal to the direction of the second magnetic field.

18. (Original) The system of Claim 8, wherein the direction of the third magnetic field is orthogonal to the direction of the first magnetic field and the second magnetic field.

19. (Previously Presented) An antenna system comprising:

a first core;

a first winding disposed about the first core for transmitting/receiving electromagnetic signals;

a second winding for transmitting/receiving electromagnetic signals disposed about the first core and the first winding;

activation circuitry connected to the first winding and the second winding;

a second core;

a further winding disposed about the second core for transmitting/receiving electromagnetic signals; and

a yet further winding for transmitting/receiving electromagnetic signals disposed about the second core and the further winding,

wherein the first winding and the second winding are wound such that a direction of a first magnetic field generated by the first winding is different than a direction of a second magnetic field generated by the second winding,

wherein the activation circuitry activates the first winding separately from the second winding, and

wherein the yet further winding is serially connected to the second winding.

20. (Original) The system of Claim 1, wherein the first winding is optimized for high permeability.

21. (Original) The system of Claim 1, wherein the second winding is optimized for high permeability.

22. (Original) The system of Claim 8, wherein the third winding is optimized for high permeability.

23. (Previously Presented) The system of Claim 19, wherein at least one of the further winding and the yet further winding is optimized for high permeability.

24. (Original) The system of Claim 1, wherein at least one of the first winding and the second winding is shielded.

25. (Original) The system of Claim 8, wherein the third winding is shielded.

26. (Original) The system of Claim 1, wherein the first winding and the second winding are balanced.

27. (Original) An inductively coupled system comprising:

a first core disposed on an implantable unit;

a local first winding disposed about the first core for transmitting/receiving RF signals;

at least one local second winding for transmitting/receiving electromagnetic signals disposed about the first core and the local first winding;

a second core disposed on a remote unit;

a remote first winding disposed about the second core for transmitting/receiving RF signals; and

at least one remote second winding for transmitting/receiving electromagnetic signals disposed about the second core and the remote first winding,

wherein magnetic fields are coupled between the local first winding and the at least one local second winding on the first core and the remote first winding and the at least one remote second winding on the second core.

28. (Original) The system of Claim 27, wherein the at least one local second winding comprises one winding.

29. (Original) The system of Claim 27, wherein the at least one local second winding comprises two windings.

30. (Original) The system of Claim 27, wherein the at least one remote second winding comprises one winding.

31. (Original) The system of Claim 27, wherein the at least one remote second winding comprises two windings.

32. (Original) The system of Claim 27, wherein the implantable unit is disposed internally in a body.

33. (Original) The system of Claim 27, wherein the remote unit is disposed externally to a body.

34. (Original) The system of Claim 27, wherein the remote unit is disposed internally to a body.

35. (Original) A method for implementing an antenna system comprising:

providing a core;

winding a first coil for transmitting/receiving electromagnetic signals about the core;

winding a second coil for transmitting/receiving electromagnetic signals about the first core and the first winding; and

activating the first coil separately from the second coil.

36. (Original) The method of Claim 35, wherein the core provided is an air core.

37. (Original) The method of Claim 35, wherein the core provided is a ferrite core.

38. (Original) The method of Claim 35, wherein the first coil is wound as a helical solenoid around the core.

39. (Original) The method of Claim 35, wherein the first coil is wound as a rectangular solenoid around the core.

40. (Original) The method of Claim 35, wherein the second coil is wound as a helical solenoid around the core.

41. (Original) The method of Claim 35, wherein the second coil is wound as a rectangular solenoid around the core.

42. (Original) The method of Claim 35, further comprising winding a third coil for transmitting/receiving electromagnetic signals about the core, the first winding and the second winding.

43. (Original) The method of Claim 35, wherein the third coil is wound as a helical solenoid around the core.

44. (Original) The method of Claim 35, wherein the third coil is wound as a rectangular solenoid around the core.

45. (Original) The method of Claim 35, wherein the first coil and the second coil are wound orthogonal to each other.

46. (Original) The method of Claim 42, wherein the first coil, the second coil and the third coil are wound orthogonal to each other.

47. (Previously Presented) The system of Claim 1,

wherein the first winding generates the first magnetic field in response to a data signal; and

wherein the second winding generates the second magnetic field in response to the same data signal.

48. (Previously Presented) The system of Claim 47, wherein the data signal is sent to the first winding and to the second winding simultaneously.

49. (Previously Presented) The system of Claim 47, wherein the data signal is sent to the first winding at a first time and to the second winding at a second time different from the first time.

50. (Previously Presented) The system of Claim 1,

wherein the first winding receives a magnetic field relating to information transmitted by a single source; and

wherein the second winding receives the magnetic field relating to the same information transmitted by the single source.

51. (Previously Presented) The system of Claim 50, wherein the activation circuitry activates only one of the first winding and the second winding at a time to receive the magnetic field.

52. (Previously Presented) The system of Claim 50,

wherein the activation circuitry activates both the first winding and the second winding to receive the magnetic field;

wherein the system further includes a processor for processing signals corresponding to the received magnetic fields; and

wherein a stronger of the received magnetic field at the first winding and the received magnetic field at the second winding is chosen for processing.

53. (Previously Presented) The system of Claim 1, wherein the first core is disposed on an implantable unit configured for implantation in a body of a medical patient.

54. (Previously Presented) The method of Claim 35,

wherein the first coil generates a first magnetic field in response to a data signal; and

wherein the second coil generates a second magnetic field in response to the same data signal.

55. (Previously Presented) The method of Claim 54, wherein the data signal is sent to the first coil and to the second coil simultaneously.

56. (Previously Presented) The method of Claim 54, wherein the data signal is sent to the first coil at a first time and to the second coil at a second time different from the first time.

57. (Previously Presented) The method of Claim 35,

wherein the first coil receives a magnetic field relating to information transmitted by a single source; and

wherein the second coil receives the magnetic field relating to the same information transmitted by the single source.

58. (Previously Presented) The method of Claim 57, wherein the activation circuitry activates only one of the first coil and the second coil at a time to receive the magnetic field.

59. (Previously Presented) The method of Claim 57,

wherein the activation circuitry activates both the first coil and the second coil to receive the magnetic field;

wherein the method further includes processing signals corresponding to the received magnetic fields; and

wherein a stronger of the received magnetic field at the first coil and the received magnetic field at the second coil is chosen for processing.

60. (Previously Presented) The method of Claim 35, further comprising disposing the core on an implantable unit configured for implantation in a body of a medical patient.